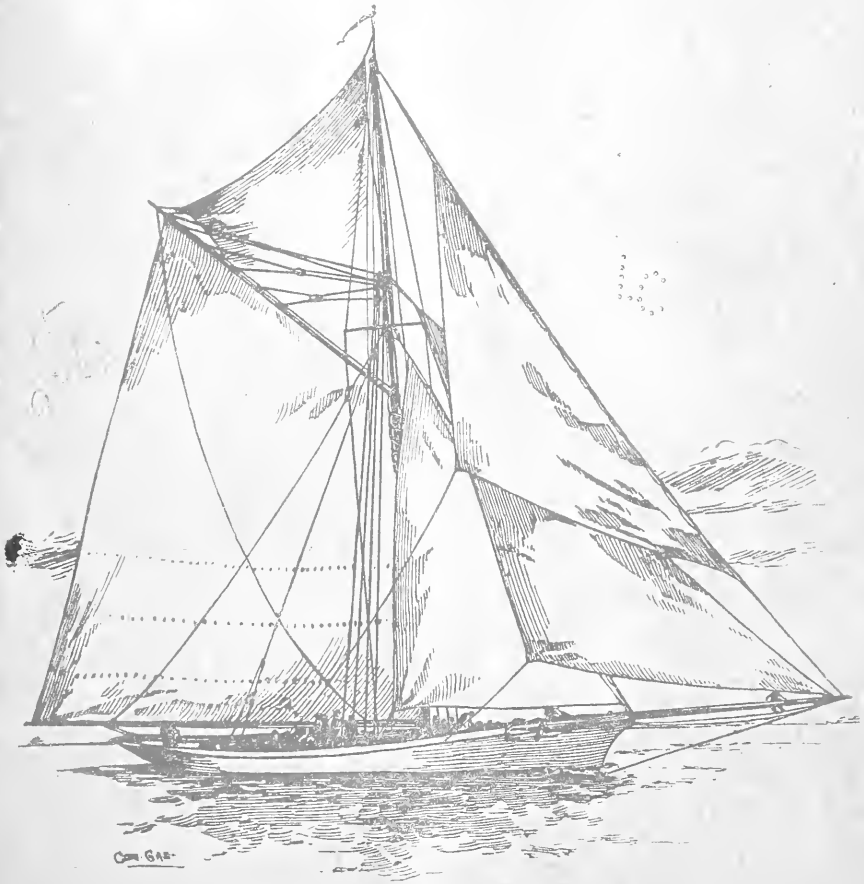
The America's Prize Cup.

THE GREAT ITERNATIONAL YACHT RACES.

By SAMUEL R. REED.



THE AMERICAN YACHT "VOLUNTEER."

PUBLISHED BY GEO. P. HOUSTON, CINCINNATI, O.
1887.

The Great International Yacht Races.

HISTORICAL SKETCH.

The race of the *Thistle* and *Volunteer* will be the seventh of the British trials to win back the Royal Yacht Squadron prize cup, which was won by the schooner *America*, against the squadron of fourteen British yachts, in the race around the Isle of Wight, in 1851. Four of these trials were from Great Britain, two from Canadian yachts. In order to keep the international character, a postscript rule was made, that the competing yacht must have come over the ocean by sail.

Till 1870, the British made no attempt to recover the cup. That year Mr. Asbury came over with the schooner *Cambria*, which sailed against the New York squadron, as the *America* had done against the *Royal Yacht*, and was beaten. He built the schooner *Livonia* for a trial next year. The New York Club selected the yacht to compete, two of the five races being run by the keel schooner *Sappho* and three by the centerboard schooner *Columbia*. Only in the fifth race did *Livonia* come in ahead, the *Columbia* having an accident to her rigging.

The next challenge was in 1876, by the Canadian schooner-yacht *Countess of Dufferin*. The agreed races were for the best two in three, the New York Club to name the one yacht to run. They were won by the centerboard schooner *Madelaine*. The next was in 1881, by the Canadian centerboard sloop, *Atlanta*, built on Lake Ontario. The Club named the centerboard sloop, *Mischief*, which won in the first two.

The next was a double-barrel challenge for the cutters *Genesta* and *Galatea*, of the R. Y. C., in 1885, the second to run if the first failed to get the prize. These vessels were designed by Mr. Beavor Webb, with intent to beat the Americans. This, and the reports of the *Genesta's* success in British waters, notified the Americans that the prize was in jeopardy. They were equal to the emergency. The New York Club ordered the building of an iron centerboard sloop, the *Priscilla*, for this race, designed by Mr. A. Carey Smith. The Eastern Yacht Club, of Boston, announced that it would come in with a centerboard sloop, designed by Burgess Bros., which was named the *Puritan*.

The international contest had now become exciting and expensive. For, besides the cost of building a new yacht each year for this race, the expense of the race itself is not less than $25,000. The *Galatea* did not come over in that year. A trial of the *Puritan* with the *Priscilla* resulted in the selection of her to run with the *Genesta*, which she completed by winning the first two, each of forty miles; one inside, by 16m. 19s. corrected time; one outside, by 1m. 28s., corrected time.

This close work seemed to prove that the *Genesta* would have beaten any other of the American yachts.

The margin was too narrow for security, and it was thought necessary to build a new yacht to contend with the *Galatea*, which was to come next year, 1886. Again did Boston come to the rescue, with a new centerboard sloop, the *Mayflower*, designed also by Mr. Edward Burgess. She was tried with three other of the most powerful yachts—the *Puritan*, the *Priscilla*, with her defects altered, and the *Atlantic*. The trial proved the *Mayflower's* superiority.

The races with the *Galatea* were, as before, for the best two in three. The first, called the inner course—an all round course of thirty-eight miles—was won by the *Mayflower* by 12m. 28s., corrected time. The second race was on the outside course, twenty miles to windward. The *Mayflower* gained decidedly in going to windward, while the wind lasted, but then a calm and a fog broke up the race. The third race, of twenty miles out and back, was won by the *Mayflower* by 29m. 9s., corrected time.

THE THISTLE AND VOLUNTEER.

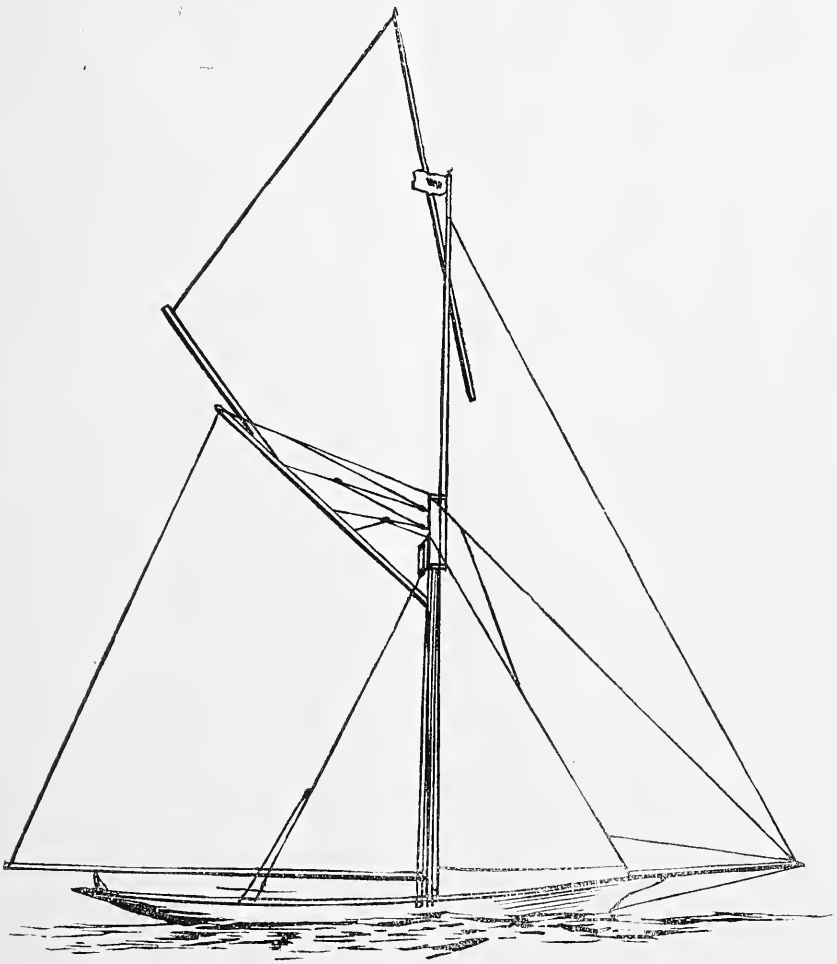
These performances, instead of giving the international contest a rest, have excited it to greater efforts It brought this year, a challenge from the R. Y. Club, naming the *Thistle*, designed by Mr. G. L. Watson, and owned by a syndicate of men, who built her especially to take the *America's* cup. The builder made a mystery of her shape, excluding all outsiders from the yard, and cloaking her in canvas in launching. This mystery has generated many absurd fancies, especially since she arrived on this side, in the heads of the New York newspaper reporters, whose conjectures of a wind-bladder contrivance under her bottom to lift her, and of a triangular fixed centerboard, and other wonderful things, sound more like small boys, who have seen no water larger than a green frog pond, than like the "old salts" which they think themselves.

It became known that the *Thistle's* designer had made a decided departure from the old British form of the yacht, by giving her twenty feet three inches beam, which is five feet three inches more than the *Genesta* and *Galatea*. The British had clung to the idea of the narrow and deep—the "knife-blade" hull, as it is called—against the American broad and shallow hull—the "skimming dish," as it is called—in the face of their repeated defeats by the shallow, broad, centerboard yachts.

But here was a departure from the British form, and an approach toward the American. As a recognition of the American idea, it was a thing to brag of; but it brought, also, the perception that this important addition to the "bearings," together with the deep fulcrum of the ballast in her lead keel, would make her powerful to carry sail. As much as fifty per cent. sail carrying power could be reckoned over that of the *Galatea*, with not near so much increase of cross-section resistance of the hull.

It was recognized that the existing yachts did not make secure the keeping of the cup. Again did Boston come to the rescue; a

public spirited citizen, General Payne, the owner of the *Mayflower*, building a new steel centerboard yacht, the *Volunteer*, designed by Burgess, especially to meet the Scotch *Thistle*. The *Thistle*, before



THE SCOTCH YACHT "THISTLE."

coming over, outsailed the best of the British yachts. The *Volunteer* has outsailed the *Mayflower*, *Puritan* and *Priscilla*, proving herself decidedly superior.

This in brief is the history, and this the present situation which combine to make the coming race the most interesting of all. It will be observed with excitement by both worlds, and will for the time transcend all political events and agitations. The *Thistle's* coming has evidently weakened the confidence of the New York yachtmen, and they are more inclined to put their money on the *Thistle* than on the *Volunteer*.

PROGRESS OF AMERICAN YACHTING.

The history of American yachting is creditable. The British thought that Britannia ruled the waves in pleasure ships as much as in the fighting and carrying navies. They were surprised, when in 1851, the year of the World's Fair in London, Commodore Stevens brought over the *America*, designed by George Steers and owned by several Americans, and challenged the whole Royal Yacht Club.

The boldness of it, and some glimpses of the *America's* sailing, struck them with panic. The *America* was admitted to the R. Y. Club hospitalities, but could get no race. She posted a general challenge, for any sum from a thousand guineas to ten thousand, and she made special challenges, but could get no race, except one with the *Titania* for one hundred Pounds, which she easily won. She was after big money to pay her expenses, but could not get it. She was about to come home, but at much urgency decided to enter for the regatta at which the Royal Yacht Club cup was the prize.

The *America* "distanced" the whole squadron of fourteen, which started out of seventeen entries. Mr. Steers gave the prize cup to the New York Club in trust, to hold, to be sailed for as the prize of international championship. Whoever takes it will have to hold it in the same trust. The cup is a tall pitcher or vase with a handle, elaborately wrought. It may have cost twenty guineas. It is now costing the public spirited American keepers not less than $100,000 a year.

The *America* is a keel schooner, not much variation from the model of the New York pilot boats of that time, which had become famous for sailing and weatherly qualities. She had none of the great kites which the yachts have for light and fair winds. But she gave the British yachtmen a new idea of the set of sails, hers holding flat, enabling her to sail close to the wind, while theirs were baggy. She is still afloat, owned by General Butler, and is still about in the races, sailing as an outsider in some of them, but is outsailed by the big, singlemasted yachts of recent construction.

The British fancy was that their yachting was on the deep sea and that the American was near the shore. But the boldest and most remarkable of all yachting was the race of the schooner yachts *Henrietta*, *Fleetwing* and *Vesta*, in racing rig, across the Atlantic in midwinter, starting December 11, 1866—the *Henrietta*, with her owner, J. G. Bennett, making her passage of 3,106 miles in thirteen days, twenty-one hours and fifty-one minutes; the *Vesta*—the only centerboard of the three—having outsailed both till near the coast, when she lost the race by a mistake in navigating. After this plucky performance their was a shrinkage of the British conceit, that theirs was the yachting of the deep.

More important than any matter of National pride in these races is the fact that these competitive trials are bringing about on each side a change in the form of hull by which the American "skimming-dish" and the English "knife-blade" models are approaching each other. Already has this wide departure in adding more than five feet to the beam of the English hull, and the superiority which

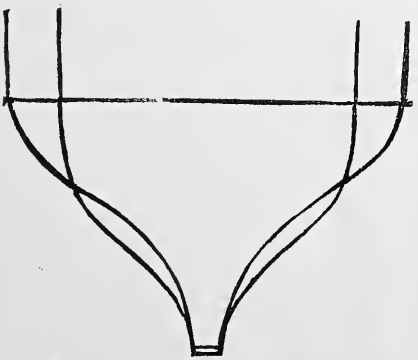
the *Thistle* has shown, decreed a revolution in English yacht building, and consigned to a state of obsoleteness a great fleet of yachts.

On our side, each one of the Burgess designs—the *Puritan*, the *Mayflower* and the *Volunteer*—has moved toward the English form in depth, and in the base of an outer keel for a part of the length, in addition to the centerboard. The *Puritan*, *Mayflower* and *Volunteer* are respectively 23, 23.6½, and 23.6 feet beam. The *Genesta* and *Galatea* are but 15 feet beam, but are each of 13.6 draft. The draft of the *Priscilla* is 7.9 feet, while her beam is 22.5 feet. The *Puritan's* draft is 8.2 feet. The *Mayflower's* draft is 9.9 feet; the *Volunteer's* 10 feet.

This shows in Mr. Burgess a tendency to an increase in depth, while retaining the American width. Each of these has been swifter than the preceding. Whether Mr. Burgess can go on year after year, designing yachts a little swifter, is an interesting question. But it may be set down as certain, that if the *Thistle* takes the cup, he will make as large an advance toward the British keel-cutter form in his next design as Mr. Webb made toward the American form in the *Thistle*.

The names cutter and sloop, as a distinction, are a confusion. In America, the single mast, fore-and-aft rig is called the sloop rig; in England, the cutter. The schooner rig is the handier, especially for sea-going, but the contest has now become fine between single-masted rigging, as giving the highest speed at all points. The English usage applies the name sloop to the American shallow hull and centerboard, and calls their deep hull the cutter. As these names properly describe the rig, all these single-masted yachts are cutters and all sloops.

The following sketches of the midship sections will give a correct idea of the difference between the British "cutter" and the American "sloop." The narrow form in the first is a correct sketch of the *Galatea*. That which overlies it gives correctly the wider beam of the *Thistle* and the depth, but the other change of shape is conjectural, save that of necessity, she is not so wall sided as the *Galatea*. Let it be remembered that the *Galatea's* beam is 15 feet, the *Thistle's* 20.3 feet, the *Mayflower's* 23.6½ feet.



The sketch below is a correct representation of the *Mayflower's* midship section:

All yachts of the same rig are alike in pictures, but the cut above,

and that on the cover, will give a correct idea of the rig of these yachts in the regular sails. Besides these they have a lot of big and little kites for light winds and fair winds. The sprit top-sail in the cut is a kite for a breeze; there is a regular gaff top-sail for a wind.

A lot of British yachts has been made obsolete by the *Thistle's* performance, following the fact that they were inferior to the American in speed. *Volunteer's* performance has reduced a lot of American great yachts to a second class, and their type to obsoleteness; and the probability is that Mr. Burgess' evolving mind is forecasting a revolution in the American model, even if it should not be expedited by a victory of the *Thistle* over the *Volunteer.*

A further advance on "cutter" lines is in a compromise keel. The *Puritan* has keel and centerboard, and outside lead ballast. The *Mayflower* has more of the same, each one increasing the proportion of keel ballast to inside ballast. The *Volunteer's* steel sides and frames are extended down to form a trough or hollow keel, running from the centerboard box to the stern post, and running from that box forward, till it scarfs out. This is filled with lead melted and run in, making a part keel, and carrying the lead without injury to the structure of the hull. Her keel ballast is fifty tons, inside ballast ten tons.

The *Mayflower's* keel ballast is thirty-seven tons, inside ballast fourteen tons. But the keel ballast is—at least in part—bolted on to the outside of the bottom, whereby it is not so deep as in the *Volunteer's* steel trough, besides the marring of the lines, and the injury to the bottom by this bolting.

KEELS VS. CENTERBOARDS.

This brings to view the essential part which the recent invention of ballast under the bottom has taken in the racing of yachts, and its bearing on the proportions of depth, and on the relative advantages of keel and centerboard.

Boys have always applied lead ballast on the keels of their miniature sail boats, but only within a few years has it been applied to sail boats for grown men. At first, plates of lead were bolted on the bottom. But in the *Genesta* and *Galatea* the keels were made hollow and filled with lead melted and poured in. This is made more complete in vessels built of iron, and has been applied in the *Volunteer,* so far as she has a keel. So important is the gain in placing the ballast low and in a deep keel, that it is probable that this has decreed that the centerboard must go, because its place is wanted for a keel to carry ballast, if not indeed that the shallow model shall go.

A minor event, which in the present situation has attracted much attention, and has given another shake to confidence in the skimming dish sloop, is that in a recent race of lesser craft, the *Papoose,* a keel-boat built by Burgess, beat by more than twenty minutes in a race of twenty miles, the best centerboard boat of her size on the Massachusetts coast. If Burgess can do this in a small "cutter,' the question is what might he do in a first class keel yacht, as large as the *Volunteer,* which is evidently a compromise of his ideas.

The American "sloop" model has a centerboard to make up for its shallowness and its lack of keel, in holding against drifting, while going "on a wind," *i. e.*, with the wind on or forward of the beam. The centerboard is a thin structure of planks which is let down through a long trunk or box, amidship, by which a sufficient flat surface of resistance to the side drift can be given out. This is drawn up when going before the wind, to diminish the resisting surface and draft, and because the vessel then steers easier without it and because it is of no use.

As the centerboard makes up in depth for its shortness as a keel, it is less obstruction than a keel in "tacking." In a course which makes necessary short tacks in "beating" this is important, but is of less importance in long stretches, and none at all at sea. It is an American invention, which came into general use in the Hudson River sloops, because of the facility in short tacks, and for reducing the draft. It is used by all sail vessels on the Great Lakes. The British yachtmen think there is a mystery in the centerboard. For instance, when the owner of the *Mayflower* wanted to enter her for this year's races in British waters, the managers replied that her admission with "unrestricted conterboard" could not be allowed. Yet the centerboard is of no advantage as against a keel in the courses of the British races, and a restricted centerboard would be a queer condition.

The deep hold which the centerboard has may be seen in the draft of the *Mayflower*, which with centerboard down is twenty feet, making over ten feet depth of bare board, perhaps twenty feet wide below the hull. The seaboard yachts have no need of the centerboard to reduce draft, as on the lakes and rivers. It weakens the hull and cuts up the interior. As the keel is wanted for ballast, and as it can be deepened in the center and abaft—as the *Thistle* has probally done—and scarfed off forward to give ease in tacking, it is probable that the centerboard will go out.

THE RACES OF 1887 AND AFTER.

A notable fact is, that while the prize cup is held by the New York Club, the vessels that have kept it on this side in the latest two races were built in Boston especially to defend the cup, and that again a Boston man came to the front when all recognized that a faster boat must be built to contend with the *Thistle*. Whatever the event of the race this year, it will not end the international contest, nor the building of yachts to contend for this cup.

The changes which have been made on both sides, and the marked gain by them, and their approach from each extreme toward each other—the English in beam, the American in depth and keel—show plainly the perfected model has not been reached, and there is still a space for possible gain. If the *Thistle* wins, Mr. Burgess will go deeper with hull and keel in his next design. If the *Volunteer* wins, Mr. Webb will give still more beam to his next design, and perhaps will lessen her depth.

In the new departure on both sides the superiority of either in

the future depends on the best adjustment of the relative properties of width, depth, bearings, ballast fulcrum, cross-section, sail power, lines of displacement and the rest. Not all of these can be calculated with certainty. For example, only by experiment can be determined whether a gain is made, or how much gain, by the wide yacht's leaning over on her lee bearings, on a wind, lifting out the other side. But the contest has brought a cutting loose from old prejudices on both sides, which promises a great advance in the model yachts, and a demonstration which will be useful to all shipbuilding.

Yacht building has created much employment for American workmen, and yacht sailing has given many berths to seamen, at good wages. The recent growth of steam yachts has added greatly to this, and to the country's mechanical resources. The number of these is greater than there is general information of. Some of these are large ships, capable of circumnavigating the globe. Many have a notion that these sailing yachts which are racing for the cup are small vessels. They are nearly a hundred feet long and measure over a hundred tons, and their long spars and great spread of sails require large crews and expert seamanship.

The confidence of the *Thistle's* designer in her sail bearing power has sparred her about as heavily as the more beamy *Mayflower* and *Volunteer*. The single mast on which all sail depends in these sloops has to be tall, and the bowsprit very long, and the sails are very large and require skillful handling. The masts of the *Galatea*, *Thistle*, *Mayflower* and *Volunteer* are, respectively, 53, 62, 63, 65 feet; the topmasts, 47, 45, 46, 48 feet; the booms, 73, 80, 80, 84; the gaffs, 45, 50, 50, 52; the bowsprit outboard, 36.6, 38.6, 38, 37; the spinnaker boom, 65.6, 70, 67, 70; the sail area, by N. Y. Y. C. rule, 7,505, 8,880, 8,634, 9,000.

The owner of the *Galatea* told that at first she was heavily sparred, and she would lay down and do nothing, and that the reduction of her spars helped her speed. Comparing the four vessels in other dimensions the area of midship section is relatively 125, 115, 92, 96 feet; the displacement 157, 135, 110, 116 tons. If the *Volunteer* with midship section of 96, can stand up to her sale area of 9,000 as well as the *Thistle* with her midship section of 115 to her sale area 8,880, the reckoning would be that the *Volunteer* would win.

The American yachtmen, who have been connected with the *America's* cup races deserve to win because of their public spirit. All America hopes that the *Volunteer* will keep the championship, and this would prove her form superior. But if the *Thistle* shall win, it will be by means of a change in the English idea of yacht building which the American victories have compelled them to make, and which will prove that an advance has been made in the form of the hull, which will be a benefit to all shipbuilding, and in which America will give John Bull a trial next year in an improvement on his new American lines.

The contest is to be in three races, unless decided in the first two, and the appointed days are September 27th, 29th and October 1st.